

University of Wollongong

## Research Online

---

Faculty of Health and Behavioural Sciences -  
Papers (Archive)

Faculty of Science, Medicine and Health

---

20-2-2009

### Trends in the affordability of the Illawarra Healthy Food Basket 2000-2007

P. G. Williams

*University of Wollongong*, [peterw@uow.edu.au](mailto:peterw@uow.edu.au)

A. Hull

*University of Wollongong*

M. Kontos

*University of Wollongong*

Follow this and additional works at: <https://ro.uow.edu.au/hbspapers>



Part of the [Arts and Humanities Commons](#), [Life Sciences Commons](#), [Public Health Commons](#), and the [Social and Behavioral Sciences Commons](#)

---

#### Recommended Citation

Williams, P. G.; Hull, A.; and Kontos, M.: Trends in the affordability of the Illawarra Healthy Food Basket 2000-2007 2009.

<https://ro.uow.edu.au/hbspapers/106>

Research Online is the open access institutional repository for the University of Wollongong. For further information contact the UOW Library: [research-pubs@uow.edu.au](mailto:research-pubs@uow.edu.au)

---

## Trends in the affordability of the Illawarra Healthy Food Basket 2000-2007

### Abstract

#### Aims

The Illawarra Healthy Food Basket (IHFB) was developed as one measure to monitor the affordability of healthy eating in Australia. It consists of 57 items selected to meet the nutritional requirements of a reference family of five. The basket was first costed in the Illawarra region of Australia in 2000 and again in 2001 and 2003. This study aimed to repeat the costing of the basket in 2005 and 2007 and to assess the trends in affordability since 2000.

#### Methods

Costing was carried out in the same five suburbs as previous surveys, utilising a large supermarket, greengrocer and butcher from each. Comparison data included: welfare entitlements obtained from Centrelink, Average Weekly Earnings and the Consumer Price Index for food.

#### Main outcome measures

The average weekly cost of the IHFB in 2005 and 2007, and trends in the costs compared to changes in average weekly earning and welfare benefits for the reference family.

#### Results

The total cost of the IHFB in 2007 was \$242.49, an increase of 20.4% since 2000, with the greatest increases in the prices of vegetables (55.7%) and fruit (46.7%). Fruits, vegetables and meat were cheaper at independent grocers and butchers than in supermarkets. The percentage of AWE or welfare payments required to purchase the IHFB remained stable at slightly below 30%.

#### Conclusion

These results indicate that the affordability of healthy eating has remained relatively constant from 2000 to 2007, but the significant increases in fruit and vegetable prices may be making healthy food choices more difficult.

### Keywords

dietary guideline, food price, food security, healthy food basket

### Disciplines

Arts and Humanities | Life Sciences | Medicine and Health Sciences | Public Health | Social and Behavioral Sciences

### Publication Details

This article was originally published as Williams, P, Hull, A & Kontos, M, Trends in the affordability of the Illawarra Healthy Food Basket 2000-2007, Nutrition and Dietetics, 66, 2009, 27-32. Original journal information available [here](#)

**Title:** **Trends in affordability of the Illawarra Healthy Food Basket: 2000 – 2007**

**Authors:** **Peter Williams** BSc(Hons) DipNutrDiet MHP PhD FDAA  
*Associate Professor*

**Alycia Hull** MSc(NutrDiet&Rehab)  
*Student Dietitian*

**Marianne Kontos** BNutrDiet  
*Student Dietitian*

**Correspondence to:** A/Prof Peter Williams  
School of Health Sciences  
University of Wollongong  
Wollongong NSW Australia 2522

**Tel:** 61 2 4221 4085  
**FAX:** 61 2 4221 4096  
**e-mail:** peter\_williams@uow.edu.au

**Running Title:** Healthy Food Basket 2000-2007  
**Key Words:** Food security; food prices; dietary guidelines; healthy food basket  
**Word Count:** 3280  
**Version:** IHFPI-2008-Revised

## **Abstract**

### **Aims**

The Illawarra Healthy Food Basket (IHFB) was developed as one measure to monitor the affordability of healthy eating in Australia. It consists of 57 items selected to meet the nutritional requirements of a reference family of five. The basket was first costed in the Illawarra region of Australia in 2000 and again in 2001 and 2003. This study aimed to repeat the costing of the basket in 2005 and 2007 and to assess the trends in affordability since 2000.

### **Methods**

Costing was carried out in the same five suburbs as previous surveys, utilising a large supermarket, greengrocer and butcher from each. Comparison data included: welfare entitlements obtained from Centrelink, Average Weekly Earnings and the Consumer Price Index for food.

### **Main outcome measures**

The average weekly cost of the IHFB in 2005 and 2007, and trends in the costs compared to changes in average weekly earning and welfare benefits for the reference family.

### **Results**

The total cost of the IHFB in 2007 was \$242.49, an increase of 20.4% since 2000, with the greatest increases in the prices of vegetables (55.7%) and fruit (46.7%). Fruits, vegetables and meat were cheaper at independent grocers and butchers than in supermarkets. The percentage of AWE or welfare payments required to purchase the IHFB remained stable at slightly below 30%.

### **Conclusion**

These results indicate that the affordability of healthy eating has remained relatively constant from 2000 to 2007, but the significant increases in fruit and vegetable prices may be making healthy food choices more difficult.

## Introduction

Food prices are thought to influence consumers' choices, especially those on lower incomes<sup>1,2</sup> and food insecurity and obesity are strongly inversely associated with household and per capita income<sup>3,4</sup>; yet there are few ongoing programs monitoring the affordability of healthy foods either in the Australian context or elsewhere. Several studies have shown that people from socio-economically disadvantaged backgrounds are less likely to purchase food consistent with dietary guidelines<sup>5</sup>, but it is unclear whether this is primarily an effect of food prices or is related more to food access issues (through limited transport or range of accessible food outlets) or other factors such as limited nutrition literacy. It is known that when diet selection is driven by cost considerations alone, the resulting diets tend to be more energy-dense and nutrient poor<sup>6</sup>. In North America and Ireland, studies have reported that people on minimum wages do not have adequate incomes to meet basic needs, including a nutritious diet<sup>7,8</sup>, and low income does seem to be a primary risk factor in food insecurity<sup>9</sup>. There is a general perception that healthy eating is more expensive, and while some research supports this idea<sup>10</sup>, this has not always been found to be the case<sup>11</sup> and more studies are needed on the relationship between diet quality and food costs<sup>12</sup>. At the same time, over the past two decades, the overall price of food has risen about the same as that for non-food items, while consumer incomes have risen significantly too, so that food is in fact more affordable than ever<sup>13</sup>.

The Illawarra Healthy Food Basket (IHFB) was established in 2000 to provide one mechanism for ongoing monitoring of the affordability of healthy food in Australia. It consists of a basket of 57 foods, designed to meet the weekly nutritional requirements of a family of five in the Illawarra region of Australia. A full description of the foods has been published previously<sup>14</sup>, but briefly the basket includes 10 breads and cereals, 3 dairy foods, 15 vegetables, 6 fruits, 10 meats, fish, poultry eggs and nuts, and 13 extra foods – including margarine, coffee, biscuits, ice-cream and vegemite. Although it was developed to conform with dietary guidelines and to meet the previous targets of recommended dietary intakes (RDIs)<sup>15</sup> it is unlikely that the changes in the new 2006 nutrient reference values have significant implications for the food choices in the basket since most RDIs were exceeded by substantial margins<sup>14</sup>. Results from surveys of the cost of the IHFB have been reported in full for the years 2000, 2001 and 2003<sup>16</sup>, and summary data from 2005 is available in a conference abstract<sup>17</sup>. Those reports

generally found that the affordability of the IHFB had remained relatively constant compared to average weekly earnings and social security benefits.

Since the development of the IHFB, similar studies have been undertaken in Adelaide, using the same basket of foods <sup>18</sup>, as well as in Victoria, with a newly developed basket of 44 items <sup>19</sup> and in NSW by the Cancer Council <sup>20</sup>. In Queensland a series of cross-sectional surveys from 1998 to 2006 have continued to measure the cost and availability of a standard basket of healthy food items, the Healthy Food Access Basket (HFAB), with a particular focus on the impact of remote geographical locations <sup>21</sup>. This diversity of approaches has led to recent calls for the development of a national monitoring system <sup>22</sup>.

This paper reports in full the results from the two most recent surveys of the cost of the IHFB, conducted in 2005 and 2007, and analyses trends in the Illawarra Healthy Food Price Index (IHFPPI) over the seven year period from 2000. It thus provides the most extensive longitudinal data on the affordability of a healthy food basket (compared to income) in an Australian context and is the only NSW data currently available for comparison with studies from other parts of the country.

## **Methods**

### **Costing the food basket**

The content of the IHFB and the pricing methods have been reported in detail previously<sup>16</sup>. In brief, a basket of 57 commonly available food items was designed to meet the weekly nutritional needs of a reference family of five (one 65 year old female, two 39 year old parents, and two children – a 15 year old girl and a 5 year old boy). The food items in the basket were costed, using the same methods as the previous surveys in September 2005 and 2007, at the main supermarket, greengrocer and butcher (based on floorspace) in the same five suburbs (Corrimal, Wollongong, Figtree, Warrawong, Warilla), in the Illawarra region of New South Wales, south of Sydney,.

At the time of the 2007 survey, the Franklins supermarket at Warrawong had closed and a Coles supermarket in the same shopping complex was used instead. Consequently, in order to ensure a cross-section of supermarket chains were included in the survey, the Woolworths store in Warilla was replaced with the Bi-Lo supermarket in the same centre, resulting in a total of one Bi-Lo, two Coles and two Woolworths supermarkets in the 2007 survey. As before, the largest individual butcher or greengrocer in the same shopping centre as the supermarket was also used.

In each suburb, the average price of meat, fruit and vegetables was calculated by taking the mean of the prices from the supermarket and the butcher or greengrocer (ie, assuming half these products were purchased at the supermarket and half at the independent store). The final estimated price of the basket was calculated as the mean of the prices recorded in each of the five suburbs. The IHFPI was calculated by setting the baseline cost of the IHFB in September 2000 equal to an index value of 100 and calculating the values in later surveys as a percentage of this.

### **Comparison measures**

Data on average weekly earnings (AWE) - all employees total earnings, NSW - from the Australian Bureau of Statistics (ABS) were used as one comparison measure<sup>23</sup>. Since data for those reports is collected in May each year, the values represent the AWE from four months before each food price survey was conducted. Information on available welfare payments for

the reference family was sought from staff of the Commonwealth employment service, Centrelink. The assumptions for this estimate were that no family member was employed, the 65-year old female was single, and unemployment and child support allowances were paid without any rental assistance.

The results from the 2005 and 2007 surveys were compared with those from the three previous surveys <sup>16</sup> and also with trends in the consumer price index (CPI) for food in Sydney over the same period <sup>24</sup>.



## Results

The cost of the IHFB from 2000 to 2007 is summarised in Table 1. The average IHFB cost from all five suburbs in 2007 was \$242.49, which represents an increase of \$41.03 (20.4%) from the baseline survey in 2000, and an increase of \$7.49 (2.9%) from 2005. The basket cost varied each year by an average of 8% between the highest and lowest priced suburb. There was no consistent relationship between a suburb's socioeconomic status and the basket prices, although from 2001-2005 the lowest-priced baskets were all in a low SES location (Warilla). As in earlier surveys, the average price of the weekly basket was lower if all fresh fruit, vegetables and meat were purchased from independent greengrocers and butchers, rather than at the supermarkets: by \$8.04 (3.4%) in 2005 and \$8.70 (3.5%) in 2007.

Figure 1 shows that the food categories in the basket which incurred the greatest price increases (averaged over the five suburbs) between 2000 and 2007 were vegetables (55.7%) and fruit (47.2%), with increases more than twice that of the basket as a whole. In contrast, the price of breads and cereals and dairy foods remained relatively constant or declined slightly over the seven year period.

The affordability of the IHFB, represented as a proportion of each of the two comparison weekly income sources, is shown in Table 2. The values have remained relatively constant over the seven year period at around 29% of AWE and 31% of family welfare payments, with a slightly improving trend over the last six years. The lowest proportions were found in 2007. The IHFPI has risen to 120.4 in 2007 from a standardised value of 100.0 in 2000. Over the same period the increases in both AWE and welfare benefits that would be payable to the reference family have both increased to higher values - 128.1 and 127.8 respectively (Figure 2).

## Discussion

The increases in the cost of IHFB (20.4% over the past seven years) is less than the increase in the CPI for food from September 2000 to 2007 (31.9%)<sup>24</sup>. These differences are likely to be due to the fact that the food basket used in the CPI comprises a wider range of food items than the IHFB, including restaurant meals and take-away foods. In addition the CPI food basket is based on typical popular food purchases, not a specific selection of healthy items. The change in the IHFB is also less than the increase reported for the Queensland HFAB (42.7% from 2000 to 2006)<sup>25</sup>. The HFAB consists of a higher proportion of primary core foods, with very few 'extra' foods, and includes basket costs from many more remote and rural regions. The HFAB annual cost increases have consistently been higher than the CPI for food in Brisbane. The total cost of the IHFB in 2005 (\$235.66) was similar to the value of \$245.63 reported in Adelaide in the same year using the same food basket<sup>18</sup>.

The finding that the largest increases in prices were for the vegetable and fruit components of the IHFB reflect the findings also reported with the Queensland HFAB from 2000-2006<sup>25</sup>. This trend is of concern at a time when there has been a national campaign to increase the consumption of these commodities<sup>26</sup>. Increasing food costs may be a significant barrier to successful outcomes from these health promotion activities, since it is known that consumers already perceive these foods to be expensive<sup>27</sup>. The reasons for the increases are multifactorial, including the impact of prolonged local droughts, increasing fuel and other production costs, and long term climate changes affecting the Murray-Darling Basin<sup>28</sup>. Policy approaches that focus on reducing costs may therefore be more important than consumer education about the health benefits of fruits and vegetables.

The affordability of the IHFB relative to income has remained relatively constant over the seven year period. The data on the IHFB as a proportion of AWE and welfare payments show that the reference family on average incomes or relying on welfare payments would need to spend just under 30% of the household income to purchase the IHFB. In contrast, the most recent ABS Household Expenditure Survey found that in 2003-4 Australians in the lowest income quintiles generally spent only 20% of household expenditure on food<sup>29</sup>. Since the IHFB is based on a hypothetical family of five people, which is twice the size of the average Australian household of 2.5 persons<sup>30</sup>, this difference is not unexpected and the results should not be interpreted to mean that 30% of a household income is needed to purchase a healthy

diet for a typical Australian family. The total average expenditure of the IHFB in 2003 (\$225.86), was significantly less than the average weekly expenditure of \$270.54 on food and non-alcoholic beverages reported in the ABS survey by a couple with dependent children less than 15 years old and a lone person over 65 years <sup>29</sup>. This ABS value includes the cost of meals purchased out of home (which were assumed not to be purchased in our studies), but the IHFB result still supports the view that prudent purchasing of a healthy basket of food items is not unaffordable by the average family.

The present study continues to show that the type of food outlet where food is purchased does have an impact on food prices. Generally, it costs less to purchase fruits and vegetables at independent greengrocers and meat at butchers. Although the absolute differences were small, consumers could make useful savings by being selective about the type of food outlets when purchasing specific foods. These results are consistent with findings in a recent American study that also reported average prices of fresh produce and meat at independent grocers were lower than at supermarket chains <sup>31</sup>. The reasons for this difference are unclear, but the recent ACCC enquiry into grocery prices noted the limited incentives for major retailers like Coles and Woolworths to compete aggressively on price <sup>32</sup>.

There was no consistent relationship between the socio-economic status of the food outlet locations and the prices of the IHFB. However this finding is consistent with those of the Brisbane Food Study which also found little or no differences in food price on the basis of area socioeconomic characteristics <sup>33</sup>. Similar findings have also been reported in NSW <sup>20</sup> and Adelaide <sup>18</sup>. However, the present surveys were conducted in a relatively limited, mostly urban, area and clearly a number of other studies of the cost and availability of baskets of healthy foods in different part of Australia have consistently reported higher prices in more remote and rural locations <sup>20, 34</sup>.

With increased warnings that projected climate changes may put significant upward pressures on food prices <sup>35</sup>, it will be important to continue to undertake monitoring into the future. Furthermore, as Tim Lang has pointed out, the prices consumers currently pay for food do not reflect the full cost of production <sup>36</sup>. In one study of a UK food basket, the environmental costs were estimated to be an additional 11.8% <sup>37</sup> and in Australia, with larger transport distances, such an estimate might be even higher. If there were moves to include all the embedded energy and carbon costs of food production in retail prices in the future then it would be even

more important to continue to monitor how such changes might affect the affordability of healthy diets.

In summary, the results from the last seven years of the IHFB provide some reassurance that the affordability of healthy food is not deteriorating in Australia, but ongoing monitoring is warranted.

**Table 1. Cost of the Illawarra Healthy Food Basket in the five suburbs:  
2000 - 2007**

	2000	2001	2003	2005	2007	Change 2000-2007
			(\$)			%
Suburbs						
Corrimal	196.27	223.93	223.57	233.24	237.46	21.0
Wollongong	207.94	219.48	233.80	241.81	239.27	15.1
Figtree	212.66	228.60	231.40	239.72	245.68	15.5
Warrawong	200.74	233.16	225.09	237.21	248.31	23.7
Warilla	189.71	215.59	215.46	226.34	241.68	27.4
Average cost of IHFB	201.46	224.15	225.86	235.66	242.49	20.4

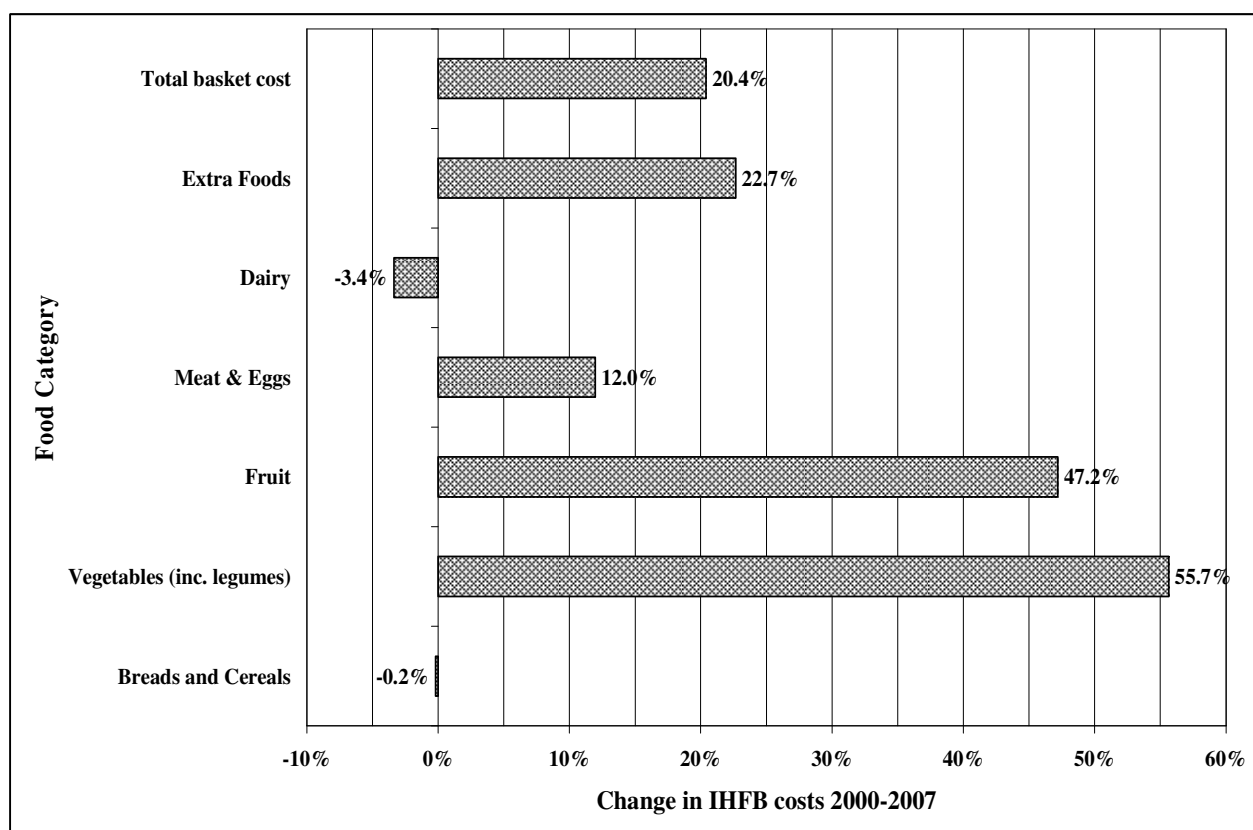
**Table 2. The cost of the Illawarra Healthy Food Basket compared to average weekly earnings<sup>(a)</sup> and welfare payments<sup>(b)</sup>: 2000-2007**

Type		2000	2001	2003	2005	2007
AWE (\$)		675.10	706.50	772.70	836.10	865.10
IHFB as % AWE		29.8	31.9	29.2	28.2	28.0
Welfare Payments (\$)						
39 year old male	Newstart (partnered basic)	316.40pf <sup>(c)</sup>	328.90pf	347.30pf	360.30pf	387.80pf
39 year old female	Parenting payment (partnered)	316.40pf	328.90pf	347.30pf	360.30pf	387.80pf
65 year old female	Age pension benefit (single basic)	394.10pf	410.50pf	452.80pf	476.30pf	537.70pf
15 year old female	Family tax benefit	147.29pf	155.82pf	165.48pf	173.74pf	189.00pf
5 year old male	Family tax benefit	116.19pf	122.92pf	130.48pf	137.06pf	145.46pf
Total per week		645.38	673.52	721.68	753.85	823.88
IHFB as % welfare payments		31.2	33.3	31.3	31.3	29.4

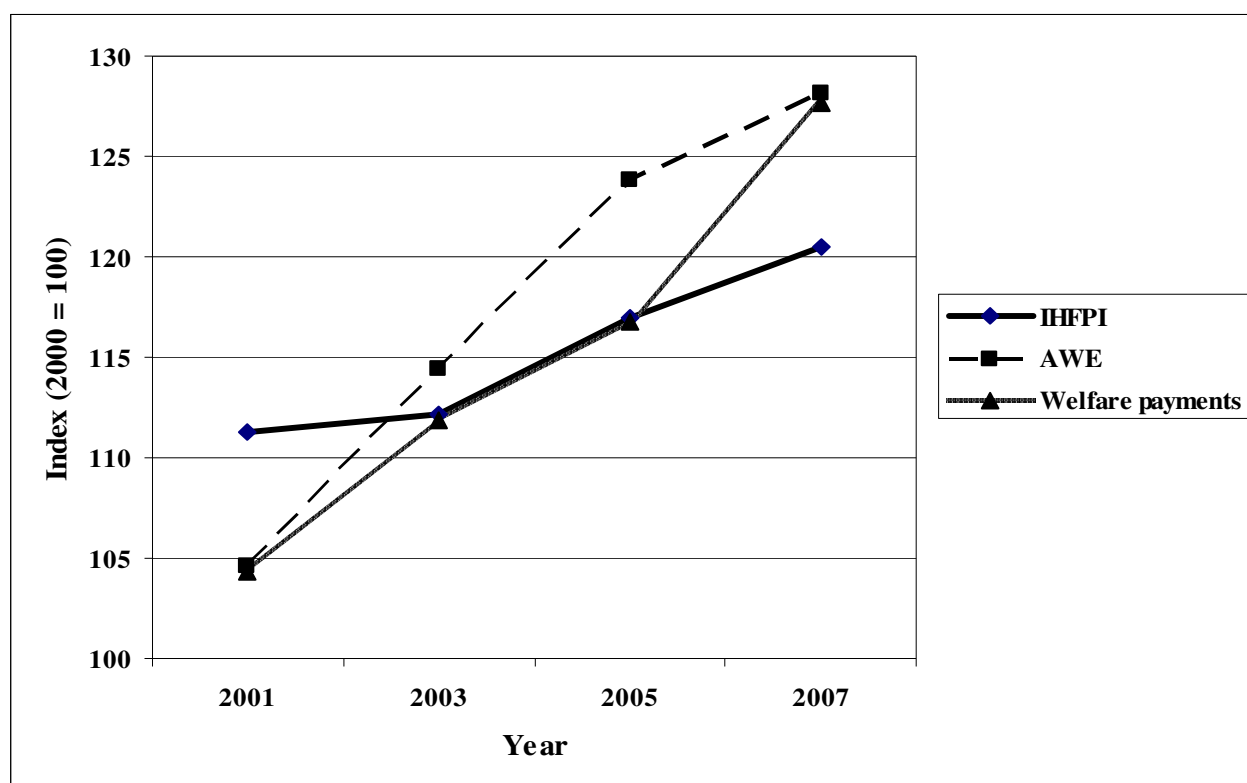
a. Average weekly earnings for all employees, total earnings in NSW in the May quarter <sup>18</sup>

b. Welfare payments per week for the reference family (personal communication: Centrelink)

c. pf = per fortnight (two weeks)



**Figure 1. Average percent change in the cost of Illawarra Healthy Food Basket components: 2000-2007**



**Figure 2. Trends of Illawarra Healthy Food Price Index, Average Weekly Earnings and Commonwealth welfare payments.**



## References

1. McComb J, Webb K, Marks G. What do we mean by "Food Access" and "Food Supply"? *Food Chain* 2000;**1**:3-4.
2. Quan T, Salomon J, Nitzke S, Reicks M. Behaviors of low-income mothers related to fruit and vegetable consumption. *J Am Diet Assoc* 2000;**100**:567-570.
3. Radimer K, Allsop R, Harvey P, Firman D, Watson E. Food insufficiency in Queensland. *Aust N Z J Publ Health* 1997;**21**:303-310.
4. Drenowski A, Specter S. Poverty and obesity: the role of energy density and energy costs. *Am J Clin Nutr* 2004;**79**:6-16.
5. Turrell G, Hewitt C, Patterson B, Oldenburg B, Gould T. Socioeconomic differences in food purchasing behaviour and suggested implications for diet-related health promotion. *J Hum Nutr Diet* 2002;**15**:355-364.
6. Andrieu E, Darmon N, Drenowski A. Low-cost diets: more energy, fewer nutrients. *Eur J Clin Nutr* 2006;**60**:434-436.
7. Williams P, Johnson C, Kratzmann M, Johnson C, Anderson B, Chenhall C. Can households earning minimum wage in Nova Scotia afford a nutritious diet? *Can J Pub Health* 2006;**97**:4320-434.
8. Friel S, Walsh O, McCarthy D. The irony of a rich country: issues of financial access to and availability of healthy food in the Republic of Ireland. *J Epidem Community Health* 2006;**60**:1013-1019.
9. Broughton M, Janssen P, Hertzman C, Innis S, Frankish C. Predictors and outcomes of household food insecurity among inner city families with preschool children in Vancouver. *Can J Pub Health* 2006;**97**:214-216.
10. Jetter K, Cassady D. The availability and cost of healthier food alternatives. *Am J Prev Med* 2006;**30**:38-44.
11. Mhurchu C, Ogra S. The price of healthy eating; cost and nutrient value of selected regular and healthier supermarket foods in New Zealand. *N Z Med J* 2007;**120**:2388-2397.
12. Story M, Kaphingst K, Robinson-O'Brien R, Glanz K. Creating health food and eating environments; policy and environmental approaches. *Ann Rev Pub Health* 2008;**29**:6.1-6.20.
13. Blaylock J, Smallwood D, Kassel K, Variyam J, Aldrich L. Economics, food choices, and nutrition. *Food Policy* 1999;**24**:269-286.
14. Williams P, Reid M, Shaw K. The Illawarra Healthy Food Price Index. 1. Development of the food basket. *Nutr Diet* 2004;**61**:200-207.
15. National Health and Medical Research Council. *Recommended Dietary Intakes for Use in Australia*. Canberra: NH&MRC, 1991.
16. Williams P, James Y, Kwan J. The Illawarra Healthy Food Price Index. 2. Pricing methods and index trends from 2000-2003. *Nutr Diet* 2004;**61**:208-214.
17. Kontos M, Williams P. Evaluation of the affordability of healthy eating in the Illawarra region 2000-2005. *Nutr Diet* 2006;**63**(Suppl1):A41.

18. Tsang A, Ndung'u M, Coveney J, O'Dwyer L. Adelaide Healthy Food Basket: a survey on food cost, availability and affordability in five local government areas in metropolitan Adelaide, South Australia. *Nutr Diet* 2007;**64**:241-247.
19. Palermo C, Wilson A. Development of a healthy food basket for Victoria. *Aust N Z J Publ Health* 2007;**31**:360-363.
20. The Cancer Council NSW. *NSW Healthy Food Basket. Cost, Availability and Quality Survey*. Sydney: The Cancer Council of NSW, 2007. [Cited 17 March 2008]. Available from URL: <http://www.cancercouncil.com.au/foodbasket>
21. Harrison M, Coyne T, Lee A *et al*. The increasing cost of the basic foods required to promote health in Queensland. *Med J Aust* 2007;**186**:9-14.
22. Burns C, Friel S. It's time to determine the cost of a healthy diet in Australia. *Aust N Z J Publ Health* 2007;**31**:363-365.
23. Australian Bureau of Statistics. *Average Weekly Earnings May 2007. Cat No 6302.0*. Canberra: ABS, 2007.
24. Australian Bureau of Statistics. *Consumer Price Index September 2007. Cat No 6410.0*. Canberra: ABS, 2007.
25. Lee A. *The 2006 Healthy Food Access Basket (HFAB) Survey*. Brisbane: Health Promotion Unit, Queensland Health, 2006. [Cited 17 March 2008]. Available from URL: <http://www.health.qld.gov.au/ph/documents/hpu/33125.pdf>.
26. Department of Health and Ageing. *Go for 2+5*. 2007 [cited 14 March 2008]. Available from URL: <http://www.gofor2and5.com.au/>.
27. Cox B, Anderson A, Lean M, Mela D. UK consumer attitudes, beliefs and barriers to increasing fruit and vegetable consumption. *Pub Health Nutr* 1998;**1**:61-68.
28. Bundaberg Fruit and Vegetable Growers. *Public submission to ACCC grocery enquiry by Bundaberg Fruit and Vegetable Growers on 11 March 2008*. [Cited 11 August 2008]. Available from URL: [http://accc.gov.au/content/item.phtml?itemId=812897&nodeId=73f5dde1441879f0f68e7b7dc2ea1645&fn=088%20-%20Bundaberg%20Fruit%20&%20Vegetable%20Growers%20\(8%20pages\).pdf](http://accc.gov.au/content/item.phtml?itemId=812897&nodeId=73f5dde1441879f0f68e7b7dc2ea1645&fn=088%20-%20Bundaberg%20Fruit%20&%20Vegetable%20Growers%20(8%20pages).pdf).
29. Australian Bureau of Statistics. *Household Expenditure Survey, Australia: Summary of results, 2003-4. Cat No 6530.0*. Canberra: Australian Government Publishing Service, 2006.
30. Australian Bureau of Statistics. *Australian Social Trends, 2007. Cat No 4102.0*. Canberra: ABS, 2007.
31. Block D, Kouba J. A comparison of the availability and affordability of a market basket in two communities in the Chicago area. *Pub Health Nutr* 2006;**9**:837-845.
32. Australian Competition and Consumer Commission. *Report of the ACCC inquiry into the competitiveness of retail prices for standard groceries July 2008*. [Cited 11 August 2008]. Available from URL: <http://www.accc.gov.au/content/item.phtml?itemId=838251&nodeId=9f6d27d1151ce6d13a88a8f68f1f26a7&fn=Overview.pdf>.
33. Winkler E, Turrell G, Patterson C. Does living in a disadvantaged area entail limited opportunities to purchase fresh fruit and vegetables in terms of price, availability, and variety? Findings from the Brisbane Food Study. *Health & Place* 2006;**12**:741-748.

34. Burns C, Gibbon P, Boak R, Baudinette S, Dunbar J. (2004) *Food cost and availability in a rural setting in Australia*. Rural & Remote Health **4**, 311 (available online at [http://www.rrh.org.au/publishedarticles/article\\_print\\_311.pdf](http://www.rrh.org.au/publishedarticles/article_print_311.pdf))
35. Parry M, Rosenzweig C, Livermore M. Climate change, global food supply and risk of hunger. *Phil Trans R Soc B* 2005;**360**:2135-2138.
36. Lang T. Food control or food democracy? Re-engaging nutrition with society and the environment. *Pub Health Nutr* 2005;**8**:730-737.
37. Pretty J, Ball A, Lang T, Morison J. Farm costs and food miles: an assessment of the full cost of the UK weekly food basket. *Food Policy* 2005;**30**:1-19.